

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of)

)
Amendment of Part 97 of the)
Commission's Rules Governing)
the Amateur Radio Service to)
Facilitate Spread Spectrum)
Communications)

RM - 8737 (assigned 1-25-96)

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STATEMENT IN OPPOSITION

By: The Indiana Repeater Council, the recognized frequency coordinator for all repeater and auxiliary stations in the Amateur Radio Service operating on frequencies above 29.5 MHz within the State of Indiana as defined in the FCC Rules and Regulations at 47 CFR Section 97.3 (a) (21)

The Indiana Repeater Council
P. O. Box 1092
Logansport, IN 46947-1092
William C. Wells, WA8HSU, Chairman
Phone: 219-722-1338
February 23, 1996

To: The Commission

CONCLUSION

The Indiana Repeater Council is **opposed** to the above captioned Petition for Rule Making filed by the American Radio Relay League, Inc.

DISCUSSION

It is believed by most persons who have not actually experimented with Spread Spectrum emissions that a direct sequence Spread Spectrum signal will simply appear as a small increase in the noise floor over the bandwidth of the Spread Spectrum signal. Spreading the RF energy into a uniform noise floor requires an infinitely long PCode. Shorter PCodes leave the RF energy in "clumps." In practice, the RF energy is typically spread quite similarly to a video signal. When the Spread Spectrum signal is monitored on a CW/SSB receiver what one hears is a carrier every 10 KHz or so. Adding a slow frequency hopper to the direct sequence will simply have the affect of moving this side band structure around at the frequency hopper rate.

The net affect of such a signal on a band crowded with narrow band users such as the 70 cm band would be squelch breaks on open-squelch FM systems, generation of hetrodynes on tone systems, creation of dots and herringbones on ATV systems and the generation of lots of weak carriers for Weak Signal and AMSAT users.

Going the other way though the Spread Spectrum signal would have considerable immunity to interference from those narrow band signals located well away from the center of the Spread Spectrum signal it would be highly susceptible to interference from narrow band signals located near the center frequency of the Spread Spectrum signal.

A far superior Spread Spectrum technique for use on a band already crowded with narrow band signals is a simple frequency hopper with dwell points set half way between existing narrow band channels. For example, with narrow band channels of 443.000, 443.025, 443.050, 443.075, 443.100, 443.125, 443.150, 443.175, and 443.200 MHz a frequency hopper Spread Spectrum system could use as dwell points 443.0125, 443.0375, 443.0625, 443.0875, 443.1125, 443.1375, 443.1625, and

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443.1875 MHz with one of these channels serving as a sync channel. Such a Spread Spectrum system is permitted by the present rules and the latest draft of the proposed new Indiana band plan defines dwell points and sync channels for such a system. The Indiana draft band plan in fact defines dwell points and sync channels for frequency hoppers on all bands from 144 MHz through 1300 MHz though a rules change would be required to allow Spread Spectrum on frequencies below 420 MHz.

The Spread Spectrum techniques embodied in RM-8737 are, without a doubt, superior in all respects to the Spread Spectrum techniques authorized by the present rules but only if they are assigned to virgin spectrum and therefore they cannot be allowed on any frequency below 450 MHz due to present high usage of these bands by narrow band users. The Indiana Repeater Council vigorously opposes any rule change expanding the types of Spread Spectrum techniques allowed below 450 MHz and will only support such changes in the 902 MHz and 1240 MHz bands if Spread Spectrum were strictly segregated into protected sub bands. On frequencies above 1300 MHz the proposed rule change would be nonproblematic due to low usage and limited range.

In the 902 MHz band two suitably sized subbands 12 MHz apart and in the 1240 MHz band two suitably sized subbands 12 MHz apart would permit the development of Spread Spectrum repeaters. Such repeaters could have hundreds of PCodes thus giving the functional equivalent of hundreds of personal repeaters.

Respectfully Submitted,

A handwritten signature in cursive script, appearing to read "William C. Wells", written over a horizontal line.

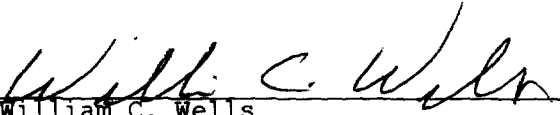
William C. Wells

/wcw

Certificate of Service

The undersigned hereby certifies that a copy of the foregoing comment on RM-8737 has been served on the American Radio Relay League, Inc. by USPS First Class Mail, pre paid at the offices of their general council:

Christopher D. Imlay
Booth, Freret & Imlay, P. C.
1233 20th Street, N. W. Suite 204
Washington, D. C. 20036


William C. Wells